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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/665,177 | 09/18/2003 | Seiji Doi | 0941.68350 | 6323 |
| 7590 | 06/30/2005 | | EXAMINER | |
| Patrick G. Burns Suite 2500 300 South Wacker Drive Chicago, IL 60606 | | | SEFER, AHMED N | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2826 | |

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/665,177 | DOI ET AL. | |
| | Examiner | Art Unit | |
| | A. Sefer | 2826 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/6/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed April 6, 2005 has been entered; no new claims have been introduced.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 39, 41 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda et al. ("Takeda") (EP 884626) (of record).

Takeda discloses (see figs. 9, 142- 147, 160-168, 174 and page 39, lines 28-58) a method for fabricating a liquid crystal display device including a liquid crystal layer clamped between a first substrate 17 and a second substrate 16, said method comprising the steps of: (a) forming a pixel electrode pattern 13 on said first substrate; (b) painting a resist film on said pixel electrode pattern; (c) exposing and developing said resist film and forming a resist pattern having a shape on said pixel electrode pattern in which multiple branches 20a/20b (fig. 71) extend outwardly from both sides of a main stem (concave/convex point of 20a/20b); conducting an ashing process for a resist pattern (page 40, lines 30-37); and conducting a thermosetting process for said resist pattern (page 42, lines 3-38); so that liquid crystal molecules in said liquid crystal layer orient approximately in vertical to a surface of said liquid crystal layer in a non-driving state in which a driving electric field is not applied to said liquid crystal layer, and said liquid crystal molecules

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orient approximately in parallel to said surface of said liquid crystal layer in a driving state in which the driving electric field is applied to said liquid crystal.

As for claim 41 and 42, the specification contains no disclosure of either the critical nature of the claimed arrangement or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda in view of Bozler et al. ("Bozler") USPN 5,959,763.

Takeda discloses the method of fabricating a liquid crystal display as recited in the claim, but does not disclose exposing a resist film at less than double exposure amount of an exposure threshold for said resist film.

Bozler discloses (see fig. 31 and col. 19, lines 58-67 and claim 16) exposing a resist film at less than double exposure amount of an exposure threshold for said resist film.

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Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Bozler's teachings with Takeda's invention since that would provide a corrugated structure as taught by Bozler.

As for claims 41 and 42, Bozler discloses a resist film having a thickness with the range recited in the claims.

6. Claims 40 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda in view of Yamanaka et al. ("Yamanaka") USPN 6,452,653.

Takeda discloses the method of fabricating a liquid crystal display as recited in the claim, but does not disclose exposing a resist film at less than double exposure amount of an exposure threshold for said resist film.

Yamanaka discloses (see col. 22, lines 14-45) the benefits of adjusting the cumulative exposure dose of a resist film.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Yamanaka's teachings with Takeda's invention since that would achieve the control of resist film thickness as taught by Yamanaka.

As for claim 43, Yamanaka discloses (see col. 31, lines 40-65) a thermosetting process at a temperature within the range cited in the claim.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Inoue et al. ("Inoue") US PG-Pub discloses in fig. 1 a liquid crystal display device comprising a liquid crystal layer clamped between a first substrate and a second substrate; and a

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resist pattern having a shape on said pixel electrode pattern in which multiple branches 20a extend outwardly from both sides of a main stem 20.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

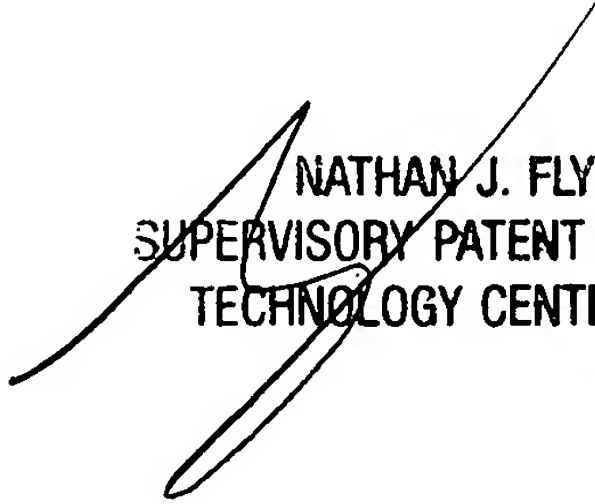
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS

June 21, 2005



NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800